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EXAMINER

GARCIA, ERNESTO

ART UNIT

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3679

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/525,705	Applicant(s) MATHES ET AL.	
	Examiner ERNESTO GARCIA	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2008 and 06 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on December 6, 2007 has been entered.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the screw shank that comes into abutment against the side wall 16c (claim 2) must be shown or the feature canceled from the claim. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1 and 8 are objected to because of the following informalities:

regarding claim 1, the comma in line 2 should be deleted; and

regarding claim 8, "the adjacent" in line 2 should be --an adjacent--. Appropriate correction is required. For purposes of examining the instant invention, the examiner has assumed these corrections have been made.

Claim Rejections - 35 USC § 112

Claims 1-9 and 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, there is an inconsistency between the language in the preamble and a certain portion in the body of the claim, thereby making the scope of the claims unclear. The preamble clearly indicated that the fastener system is “for fastening a vacuum pump (1) to a wall (2) of a stationary structure (3), having tapped holes (15) provided in the wall (2) of the stationary structure (3)”. However, the body of the claim positively recites the wall, having the tapped holes (15), e.g., “their shanks (19) ... are screwed into corresponding ones of the tapped holes” (lines 9-10). Accordingly, is the combination or subcombination being claimed? Appropriate correction, clarification, or both is required. For purposes of this Office action, the examiner has considered the wall as being part of the fastener system as a combination.

Further, the limitation “when fastened to the stationary structure” in line 15 make unclear what is fastened to the stationary structure. Is it the tapped hole? If so, how does one fasten a hole to the stationary structure?

Regarding claim 2, the metes and bounds of the claim is unclear. In particular, does the proximal segment only allow maximum lateral offset "during bending of the screw shank". It appears that the proximal segment will still allow lateral maximum offset even before the screw shank is bent.

Regarding claim 11, the recitation "an outermost opening of the hole in the stationary structure" in lines 14-15 is a relative term. How does one determine the opening being the outermost? Note that the claim does not establish a point of reference, segments in the hole similar as the through hole has been established in claim 11, lines 4-5, nor does the structure has been established being enclosed for there to be an inner wall and an outer wall to provide for innermost and outermost locations. Further, is one to assume that there's an innermost opening as well?

Regarding claims 3-9 and 18, the claims depend from claim 1 and therefore are indefinite.

Regarding claims 12-18, the claims depend from claim 11 and therefore are indefinite.

Claim Rejections - 35 USC § 102

Claims 1, 2, 11-14, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Potts, 2,748,578.

Regarding claim 1, Potts discloses, in Figure 1, a fastener system comprising a coaxial annular flange **16**, tapped holes **A1** (see marked-up attachment), through holes **A2**, and screws **32**. The tapped holes **A1** are provided in a wall of a stationary structure **30**. The through holes **A2** are provided in the flange **16**. The screws **32** have heads fitted so that their shanks pass through the through holes **A2** and are screwed into the tapped holes **A1**. Each of the through holes **A2** comprises a distal segment **A3** followed by an enlarged proximal segment **A4**. The distal segment **A3** is cylindrical and the enlarged proximal segment **A4** is cylindrical about the same axis and is adjacent to a corresponding one of the tapped holes **A1**.

Regarding claim 2, the proximal segment **A4** of the through hole has a shape. A maximum lateral offset between the through hole and the corresponding tapped hole is greater than the radius of the screw shank. The proximal segment **A4** is of a length greater than the length of the distal segment **A3**.

Regarding claim 11, Potts discloses, in Figures 1 and 4, a faster system comprising a screw **32**, a flange **16**, and a stationary structure **30**. The screw comprises

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a head and a shank. The flange **16** comprises a through hole **A2**. The through hole **A2** comprises a distal segment **A3**, and a proximal segment **A4**. The stationary structure **30** has a hole **A1**. A cross-sectional area of the distal segment **A3** taken in a direction perpendicular to a central axis of the through hole **A2** is smaller than that of the proximal segment **A4**. The proximal segment **A4** provides a gap (when the shank is being inserted). The proximal segment **A4** has an opening sized differently from an outermost opening of the hole **A1** in the stationary structure **30**.

Regarding claim 12, the proximal segment **A4** has an opening greater than the outermost opening of the hole **A1**.

Regarding claim 13, a distance measured in a radial direction of the through hole **A2** between an inside wall of the proximal segment **A4** and an opposing outside surface of the screw shank when the screw is fully inserted in the through hole **A2** is greater than a radius of the screw shank. Applicants should note that this claim does not indicate that the screw has to be sitting or abutting. Merely inserting the shank without being inserted in the hole in the stationary structure anticipates the subject matter because the shank in the through hole is considered to be “fully inserted” during insertion.

Regarding claim 14, the proximal segment **A4** has a length greater than a total length of the distal segment **A3**.

Regarding claim 18, each of the proximal segments A4 has an opening greater than an outermost opening of the tapped holes **A1**.

Claims 11, 12, 15, and 16 are rejected under 35 U.S.C. 103(a) as being anticipated by Cline, 2,083,054.

Regarding claim 11, Cline discloses, in Figure 1, a faster system comprising a screw **19**, an annular flange **12**, and a stationary structure **13**. The screw **19** comprises a head **20** and a shank. The flange **12** comprises a through hole **14**. The through hole **14** comprises a distal segment (the cylindrical portion of the hole **14**), and a proximal segment (the enlarged portion of the hole **14**). The stationary structure **13** has a hole **15**. A cross-sectional area of the distal segment taken in a direction perpendicular to a central axis of the through hole **14** is smaller than that of the proximal segment (the enlarged portion of the hole). The proximal segment provides a gap. The proximal segment has an opening **A1** (see marked-up attachment) sized differently from an outermost opening **A2** of the hole **15** in the stationary structure **13**.

Regarding claim 12, the proximal segment has an opening **A1** (see marked-up attachment) that is greater than outermost opening **A2** of the hole **15** in the structure **13**.

Regarding claim 15, the shank comprises, adjacent to the head, a smooth shank segment of a diameter substantially smaller than a diameter of the distal segment of the through hole, and is followed to a free end by a threaded segment.

Regarding claim 16, the diameter of the smooth shank segment is less than or equal to 80% of the diameter of the distal segment of the through hole.

Claim Rejections - 35 USC § 103

Claims 5, 6, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potts, 2,748,578, in view of Allart et al., 5,220,854.

Regarding claims 5 and 15, Potts, as discussed, fails to disclose the screw shank comprises, adjacent to the head, a smooth shank segment of diameter considerably smaller than the diameter of the distal segment A3 and followed to a free end by a threaded segment. Allart et al. teach, in Figure 1, a screw shank comprising, adjacent to a head, a smooth shank segment of diameter that is considerably smaller than the diameter of a distal segment of a through hole and the smooth shank is followed to a free end by a threaded segment to prevent from threading the shank all the way towards the head since such design will save manufacturing costs and time of manufacturing. Therefore, as taught by Allart et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a smooth shank

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segment, adjacent to the head, of diameter smaller than the diameter of the distal segment **A3** of Potts and the smooth shank is followed to a free end by a threaded segment to save manufacturing costs and time instead of threading the shank all the way up to the head of the screw.

Regarding claims 6 and 16, given the modification, it would have been obvious matter of design choice to design the diameter of the smooth shank segment less than or equal to 80% of that of the distal segment since such clearance J, as taught by Allart et al. (Fig. 5), prevents the thread from being damaged. Therefore, as taught by Allart et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the smooth shank segment with a diameter less than or equal to 80% of that of the distal segment to prevent the thread from being damage while being inserted in the through hole.

Regarding claim 17, Potts discloses the proximal segment **A4** having a length greater than or equal to 1.5 time a length of the distal segment **A3**.

Claims 1, 3, 4, 7, 9, and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson, 2,560,413, in view of Weis, 1,831,430.

Regarding claim 1, Carlson discloses, in Figures 1 and 4, a faster system comprising a screw **16**, a flange **A1** (see marked-up attachment), and a stationary

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structure **14**. The screw comprises a head and a shank. The flange **A1** comprises a through hole **22**. The through hole **22** comprises a distal segment **28**, and a proximal segment **A2**. The stationary structure **14** has tapped holes **26**. However, the flange **A1** in Carlson is not annular in any respect but appears square or does the flange include more than one through hole **22**. Weis teaches, in Figure 4, a flange that is annular as part of a design consideration instead of being any other shape than square since rounding the flange to be annular provides for an increase in material toward an outside wall which will handle more stresses than merely being square. Therefore, as taught by Weis, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the flange annular to provide more material toward the outside wall to handle more stresses during operation of the connection. Further, Applicants are reminded that mere duplication of the essential working parts of a device involves only routine skill in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide more than one through hole in the flange **A1** of Carlson so that the screws provide twice as much clamping force than using one through hole in the flange **A1**. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 3, the proximal segment **A2** includes a cylindrical proximal portion **A4** connected to the distal segment **28** by a circularly frustoconical distal portion **A3**.

Regarding claim 4, the frustoconical portion **A3** has a cone half-angle equal to about 60 degrees.

Regarding claim 9, Carlson discloses the system further comprises a material inserted in a space between the shank and the through hole. However, the material is not an elastomer damper (as seen by the cross-section). However, Carlson suggests, in column 4, lines 10-16, any material possessing qualities of flowing and conforming to the bores can be used). Thus, one can use rubber, an elastomer damper material, since rubber possesses qualities of flowing and conforming to bores when being compressed. Therefore, as taught by Carlson, it would have been obvious to one of ordinary skill in the art at the time the invention was made to choose rubber, an elastomer damper material, since rubber flows and conforms to bores when being compressed.

Regarding claim 11, Carlson discloses, in Figures 1 and 4, a faster system comprising a screw **16**, a flange **A1** (see marked-up attachment), and a stationary structure **14**. The screw comprises a head and a shank. The flange **A1** comprises a through hole **22**. The through hole **22** comprises a distal segment **28**, and a proximal segment **A2**. The stationary structure **14** has a hole **26**. A cross-sectional area of the distal segment **28** taken in a direction perpendicular to a central axis of the through hole **22** is smaller than that of the proximal segment **A2**. The proximal segment **A2** provides a gap. The proximal segment **A2** has an opening sized differently from an outermost

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opening of the hole **26** in the stationary structure **14**. However, the flange A1 in Carlson is not annular in any respect but appears square. Weis teaches, in Figure 4, a flange that is annular as part of a design consideration instead of being any other shape than square since rounding the flange to be annular provides for an increase in material toward an outside wall which will handle more stresses than merely being square. Therefore, as taught by Weis, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the flange annular to provide more material toward the outside wall to handle more stresses during operation of the connection.

Regarding claim 12, the proximal segment **A2** has an opening greater than an outermost opening of the hole **26** in the stationary structure **14**.

Regarding claim 13, a distance measured in a radial direction of the through hole **22** between an inside wall of the proximal segment **A2** and an opposing outside surface of the screw shank when the screw is fully inserted in the through hole **22** is greater than a radius of the screw shank.

Regarding claim 15, the screw shank comprises, adjacent to the head, a smooth shank segment of diameter considerably smaller than the diameter of the distal segment **28** and followed to a free end by a threaded segment.

Regarding claim 16, the diameter of the smooth shank segment is less than or equal to 80% of that of the distal segment **28**.

Regarding claims 7, 14 and 17, Carlson, as modified, fails to disclose the proximal segment **A2** having a length greater than or equal to 1.5 times a length of the distal segment **28**. Applicants are reminded that a change in size is generally recognized as being within the level of ordinary skill in the art. Therefore, it would have been an obvious matter of design choice to decrease the length, i.e., the depth, of the distal segment **28** so that the proximal segment will have a length greater than or equal to 1.5 times the length of the distal segment **28** since such a modification would have involved a mere change in the size of a component. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson, 2,560,413, in view of Weis, 1,831,430, as applied to claims 1, 3, 4, 7, 9, and 11-17, and further in view of Monette, 5,203,441.

Regarding claim 8, Carlson, as modified, fails to disclose a washer interposed between the head of the screw and an adjacent outside face of the flange. Monette teaches, in Figure 5, a washer 57 interposed between a head of a screw 55 and an adjacent outside face of a flange 29 to lock the screw from coming loose. Therefore, as taught by Monette, it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to provide a washer 57 interposed between the head of the screw in Carlson to prevent the screw from coming loose.

Claims 13, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cline, 2,083,054.

Regarding claim 13, Cline, as discussed, fails to disclose a distance measured in a radial direction of the through hole between an inside wall of the proximal segment and an opposing outside surface of the screw shank being greater than a radius of the screw shank. Cline suggests on column 2, lines 34-38, that the proximal segment permit bending. Since the amount of bending is relative to the sized of hole already shown, it would have been obvious to increase the sized of the hole to further increase the amount of bending. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the size of the proximal segment so that the distance measured in the radial direction of the through hole between an inside wall of the proximal segment and an outside surface of the screw shank is greater than a radius of the screw shank so that the amount of bending can be increased. Note that the screw shank could have been modified as well so that the screw is much smaller and the distance would have increased.

Regarding claims 14 and 17, Cline, as discussed, fails to disclose the proximal segment of the through hole being of a length greater than a total length of the distal

segment. As previously suggested by Cline at column 2, lines 34-38, the proximal segment allows for bending; therefore, one would have modified the size of the proximal segment so that the through hole is of a length greater than that of the distal segment or 1.5 times greater than that of the distal segment in order to increase the amount of bending. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to increase the length of the proximal segment of the through hole to be greater than that of the distal segment in order to increase the amount of bending.

Response to Arguments

Applicants' arguments filed December 6, 2007 have been fully considered but they are not persuasive. In particular, note the 35 USC 112, 2nd paragraph rejections.

With regards to the Section 112 rejections, applicants argue that claim 1 clearly recites a fastening system, which "can include coaxial flanges and through holes without requiring the wall or the stationary structure to be an element of the claim". In response, it should be noted that the remarks "can include" does not necessarily mean the flanges and the through holes are present. The use of terms as "can" or "may" are not positive statements that definitely require fulfillment. For instance, the result can or cannot be required, or may or may not. Further, it should be noted that the body of the claim merely recites a "coaxial annular flange" in line 4 and not "coaxial flanges" as argued.

With respect to Potts, applicant argues that the examiner has ignored the claimed feature that the proximal segment is adjacent to the corresponding tapped hole when fastened to the stationary structure and thus Potts does not meet this limitation. In response, it should be noted that the conditional statement "when" is not a positively limitation and does not need to be fulfilled since the features are not claimed being fastened. Note that the independent claims 1 and 11 merely claim a listing of parts and not a fastened system. Further, it should be noted that the tapped holes and the stationary structure are not claimed and thus the proximal segment is not required to be adjacent to the tapped holes. According to the applicants' comments on page 9, the applicants even admit that claim 1 does not require the "stationary structure to be an element of the claim". According to the Potts, there's nothing that would prevent the proximal end from being adjacent to a tapped hole of a wall and the applicants have not shown otherwise that this cannot be possible.

With respect to claim 2, applicants argue that the rejection does not address all the limitations of the claim. In response, note the 35 USC 112, 2nd rejection. Further, it should be noted that patentability is based on the structural limitations that are different over the prior and not how the system operates or what the system does. The reference to "bending" in lines 2-6 is not a structural limitation but rather a method step limitation and thus does not serve to structurally distinguish over the prior art. If applicants believe this limitation imparts structure, then applicants need to specifically

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point out what structure that is. Applicants further argue that the examiner contends that Potts teaches a maximum lateral offset between the through hole and the corresponding tapped hole. In response, the examiner has not contended to this allegation. Further, it should be noted that the rejected claims do not require that the through hole be offset relative to the tapped hole. Are applicants selling the product with the holes being offset? According to claim 2, the language does not reflect that.

With respect to claim 11, the same examiner's arguments mentioned with respect to claim 11 apply here as well.

With respect to Carlson, applicants argue that the reference fails to disclose the "the through hole (16) is allowed to be offset laterally (D) correspondingly relative to the associated tapped hole (15)". In response, it should be noted that there's nothing that precludes the through hole 16, in Carlson, from being offset laterally correspondingly relative to the associated tapped hole. The fact that Carlson does not show this feature is irrelevant when the claimed invention does not require that the through hole be offset laterally relative to the tapped hole but merely having the ability to do so. Applicants argue that Weis fails to cure the deficient teachings of Carlson with respect to claim 1. In response, the argument appears to relate to offset feature; however, the examiner is not relying on Weis to teach this feature since this is an inherent feature in Carlson. Weis is merely used to teach an annular flange and nothing else.

With respect to claim 11, applicants argue that both Carlson and Weis fail to disclose the proximal segment having an opening sized differently from an outermost opening of the hole in the stationary structure. In response, the examiner has not been persuaded since the opening in the structure is actually bigger due to the offset, i.e., the taper, on member 32 requires a bigger hole. See Figure 4 for a better understanding. The offset provides evident that the hole is of a different size since member 32 is wider at the lower area.

Conclusion

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Frantz, 3,404,903, and McDonald, 5,203,066, show a similar through hole in a flange.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 571-272-7083. The examiner can normally be reached from 9:30AM-6:00PM. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached at 571-272-7087.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/E. G./

Examiner, Art Unit 3679

May 13, 2008

Attachment: one marked-up page of Cline, 2,083,054

/Daniel P. Stodola/
Supervisory Patent Examiner, Art Unit 3679

Fig. 1.

